

In re Patent Application of:

ZENG

Serial No. 09/844,347

Filing Date: April 27, 2001

AY  
enc

the gate conducting layer 24. The MOSFET 70 is advantageously formed with a reduced on-resistance without degrading device ruggedness. The on-resistance is reduced since the source/body contact regions 82 are laterally spaced apart from the gate conducting layer 24. The source/body contact regions 82 thus provide an efficient short between the source and body regions of the MOSFET 70. As a result, device ruggedness is increased. --

---

In the Claims:

Please amend the claims as follows:

Please cancel Claims 1-22 without prejudice to Applicant's right to file a divisional application directed to the subject matter thereof.

---

Sub  
B1  
AS

23. (Amended) A MOSFET comprising:  
a semiconductor layer having a trench therein;  
a gate dielectric layer lining the trench;  
a gate conducting layer in a lower portion of the trench;  
a dielectric layer in an upper portion of the trench and extending outwardly from said semiconductor layer;  
source regions adjacent the outwardly extending dielectric layer; and  
source/body contact regions laterally spaced apart from said gate conducting layer.

In re Patent Application of:  
**ZENG**  
Serial No. 09/844,347  
Filing Date: April 27, 2001

AS  
enc

24. (Amended) A MOSFET according to Claim 23,  
further comprising a source electrode on said source regions  
and on said dielectric layer.

Please add new Claims <sup>32</sup> 31 - <sup>39</sup> 38.

sub  
B

32  
31. A MOSFET comprising:  
a semiconductor layer having a trench therein;  
a gate dielectric layer lining the trench;  
a gate conducting layer in a lower portion of the  
trench;  
a dielectric layer in an upper portion of the trench  
and extending outwardly from said semiconductor layer;  
source regions adjacent the outwardly extending  
dielectric layer;  
source/body contact regions laterally spaced from  
said gate conducting layer and non-interruptibly contacting  
said source regions;  
at least one conductive via between said source  
electrode and said source/body contact regions; and  
a source electrode on said source regions, on said  
dielectric layer and on said at least conductive via.

Rule 1.126

Ab

33  
32. A MOSFET according to Claim 31, wherein a  
portion of said source regions include a recess over said  
source/body contact regions.

In re Patent Application of:

ZENG

Serial No. 09/844,347

Filing Date: April 27, 2001

*Ab*  
<sup>34</sup>  
~~33~~. A MOSFET according to Claim 31, wherein said outwardly extending dielectric layer extends from said source regions equal to or less than about 1 micron.

<sup>35</sup>  
~~34~~. A MOSFET according to Claim 31, wherein said gate conducting layer is recessed in the trench within a range of about 0.2 to 0.8 microns from an opening thereof.

*Sub C3 Rule 1.1/26*  
<sup>36</sup>  
~~35~~. A MOSFET comprising:  
a semiconductor layer having a trench therein;  
a gate dielectric layer lining the trench;  
a gate conducting layer in a lower portion of the trench;  
a dielectric layer in an upper portion of the trench and extending outwardly from said semiconductor layer;  
source regions adjacent the outwardly extending dielectric layer and including an opening therein; and  
source/body contact regions laterally spaced from said gate conducting layer and non-interruptibly contacting said source regions, said source/body contact regions being exposed by the opening in said source regions.

<sup>37</sup>  
~~36~~. A MOSFET according to Claim 35, further comprising a source electrode on said source regions, on said dielectric layer, and on said source/body contact regions.

<sup>38</sup>  
~~37~~. A MOSFET according to Claim 35, wherein said outwardly extending dielectric layer extends from said source regions equal to or less than about 1 micron.